

In the Claims:

Please cancel claims 1-42 and add new claims 43-76.

43. (New) A slurry composition for a mold comprising
about 45% to about 80% by weight alumina;
about 10% to about 30% by weight silicon carbide;
about 10% to about 50% by weight colloidal silica binder;
about 0.01% to about 1% by weight welan gum;
and a setting agent.
44. (New) The composition of claim 43, wherein the silicon carbide has an average particle diameter of about 30 micrometers to about 3.5 millimeters.
45. (New) The composition of claim 43, wherein the silicon carbide is present at about 12% to about 25% by weight.
46. (New) The composition of claim 43, wherein the alumina component is present at about 50% to about 65% by weight.
47. (New) The composition of claim 43, wherein the alumina component comprises a material selected from the group consisting of brown fused alumina, white fused alumina, tabular alumina, calcined alumina, and mixtures thereof.
48. (New) The composition of claim 43, wherein the alumina component comprises particles of screen size 6x14 at about 0% to about 10% by weight of the composition, particles of screen size 14x70 at about 40% to about 60% by

weight of the composition, and particles of screen size -70 at about 2% to about 10% by weight of the composition.

49. (New) The composition of claim 43, further comprising about 2% to about 6% by weight free carbon.

50. (New) The composition of claim 49, wherein the free carbon is present in the form of pitch.

51. (New) The composition of claim 43, further comprising 2% to about 5% by weight fumed silica.

52. (New) The composition of claim 43, wherein the setting agent is present at about 0.05% to about 2% by weight.

53. (New) The composition of claim 52, wherein the setting agent is magnesia.

54. (New) The composition of claim 43, further comprising 0.05% to about 0.5% by weight polypropylene fiber.

55. (New) A casting method, the method comprising:
providing a meltable patterned substrate;
coating the substrate with a slurry composition;
allowing the slurry composition to set and form a mold; and
removing the substrate from the mold;
wherein the slurry composition comprises

about 45% to about 80% by weight alumina;
about 10% to about 30% by weight silicon carbide; and
about 10% to about 50% by weight colloidal silica.

56. (New) The method of claim 55, wherein the substrate is coated with the slurry composition by dipping the substrate into the slurry composition.
57. (New) The method of claim 55, wherein the substrate is coated with the slurry composition by spraying the slurry composition onto the substrate.
58. (New) The method of claim 55, wherein the substrate is coated with the slurry composition by brushing the slurry composition onto the substrate.
59. (New) The method of claim 55, wherein the silicon carbide is present at about 15% to about 25% by weight of the slurry composition.
60. (New) The method of claim 55, wherein the alumina component is present at about 50% to about 65% by weight of the slurry composition.
61. (New) The method of claim 55, wherein the alumina component comprises a material selected from the group consisting of brown fused alumina, white fused alumina, tabular alumina, calcined alumina, and mixtures thereof.
62. (New) The method of claim 55, wherein the slurry composition further comprises about 2% to about 6% by weight free carbon.
63. (New) The method of claim 62, wherein the free carbon is present in the form of petroleum pitch.

64. (New) The method of claim 55, wherein the slurry composition further comprises fumed silica at about 1% to about 5% by weight of the slurry composition.
65. (New) The method of claim 55, wherein the slurry composition further comprises about 0.01% to about 1% by weight welan gum.
66. (New) The method of claim 55, wherein the slurry composition further comprises about 0.05% to about 2% by weight setting agent.
67. (New) The method of claim 66, wherein the setting agent is magnesia.
68. (New) The method of claim 55, wherein the slurry composition further comprises 0.05% to about 0.5% by weight polypropylene fiber.
69. (New) The method of claim 55, wherein the alumina component comprises particles of screen size 6x14 at about 0% to about 10% by weight of the composition, particles of screen size 14x70 at about 40% to about 60% by weight of the composition, and particles of screen size -70 at about 2% to about 10% by weight of the composition.
70. (New) A casting method, the method comprising:
providing a meltable patterned substrate;
coating the substrate with a slurry composition;
allowing the slurry to form a mold; and
removing the substrate from the mold;
wherein the slurry composition comprises

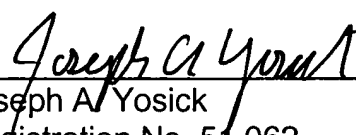
about 45% to about 65% by weight alumina;
about 10% to about 30% by weight silicon carbide;
about 10% to about 50% by weight colloidal silica; and
about 0.01% to about 1% by weight welan gum.

71. (New) The method of claim 70, further comprising providing a setting agent in the slurry composition, such that a set time can be controlled by varying the amount of setting agent.
72. (New) The method of claim 70, wherein the set time is between 15 minutes and 10 hours.
73. (New) The method of claim 70, wherein the setting agent is magnesia.
74. (New) The method of claim 70, wherein the substrate is coated with no more than three coats of the slurry composition.
75. (New) The method of claim 70, wherein the substrate is coated with no more than two coats of the slurry composition.
76. (New) The method of claim 70, wherein the substrate is coated with a single coat of the slurry composition.
77. (New) The method of claim 70, wherein the alumina component comprises particles of screen size 6x14 at about 0% to about 10% by weight of the composition, particles of screen size 14x70 at about 40% to about 60% by weight of the composition, and particles of screen size -70 at about 2% to about 10% by weight of the composition.

SUMMARY

The Examiner is invited to contact the undersigned attorneys for the Applicant via telephone if such communication would expedite this application.

Respectfully submitted,



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